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HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

POWER OF ATTORNEY OR AUTHORIZATION OF AGENT AND CORRESPONDENCE ADDRESS

Application Number	10/723,250
Filing Date	November 26, 2003
First Named Inventor	Thomas M. DiMauro
Confirmation Number	6059
Group Art Unit	1617
Examiner Name	Unknown
Attorney Docket Number	3518.1024-000

Title	LOCAL INTRAOSSEOUS ADMINISTRATION OF BONE FORMING AGENTS AND ANTI-RESORPTIVE AGENTS, AND DEVICES THEREFOR
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I/We hereby appoint

- ☒ the attorneys/agents associated with **Customer No. 021005**
☐ Practitioner(s) named below:

as my/our attorneys/agents to prosecute the application identified above, including any continuation or divisional applications thereof, and to transact all business in the United States Patent and Trademark Office connected therewith.

The correspondence address for the above-identified application is:

- ☒ Customer Number 021005
 Hamilton, Brook, Smith & Reynolds, P.C.
 530 Virginia Road
 P.O. Box 9133
 Concord, Massachusetts 01742-9133
☐ Other _____

Please direct all telephone calls and facsimiles to:

Name Deirdre E. Sanders, Esq. Tel. No. 978-341-0036 Fax No. 978-341-0136

I am the:

- ☐ Applicant/Inventor.
☒ Authorized representative of the Assignee, DePuy Spine, Inc., of the entire interest. See 37 C.F.R. § 3.71. A Statement under 37 C.F.R. § 3.73(b) is enclosed.
☐ Authorized representative of the Assignee, [], together with [], of the entire interest. A Statement under 37 C.F.R. § 3.73(b) is enclosed.

SIGNATURE of Applicant or Assignee of Record

Name & Title	Thomas M. DiMauro, Esq. Assistant Secretary
Signature	<i>Thomas M DiMauro</i>
Date	7-9-04



Docket No. 3518.1024-000

STATEMENT UNDER 37 C.F.R. § 3.73(b)

Inventors: Thomas M. DiMauro, Mohamed Attawia, Hassan Serhan, Melissa Grace, Michael Slivka, Thomas G. Ferro, Vivek N. Shenoy, Alonzo D. Cook and Scott Bruder

Application No.: 10/723,250 Filed Date: November 26, 2003

For: LOCAL INTRAOSSEOUS ADMINISTRATION OF BONE FORMING AGENTS AND ANTI-RESORPTIVE AGENTS, AND DEVICES THEREFOR

DePuy Spine, Inc., a corporation
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is

- A. ☒ the assignee of the entire right, title and interest in the patent application identified above; or
- B. ☐ an assignee together with [] of the entire right, title and interest in the patent application identified above.

The right, title and interest of the above-named assignee in the patent application identified above is established by virtue of:

- A. ☒ An assignment from the inventors of the patent application identified above. The assignment was recorded in the Patent and Trademark Office at Reel _____, Frame _____, or a copy thereof is attached.

OR

- B. ☐ A chain of title from the inventor(s) of the patent application identified above, to the current assignee as shown below:

1. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or a copy thereof is attached.
2. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or a copy thereof is attached.
3. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet.

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

Date: 7-9-04

Name: Thomas M. DiMauro, Esq.

Title: Assistant Secretary

Signature: Thomas M. DiMauro

COPY

Docket No. 3518.1024-000

Joint

ASSIGNMENT

WHEREAS, we, **Thomas M. DiMauro, Mohamed Attawia, Hassan Serhan, Melissa Grace, Michael Slivka, Thomas G. Ferro, Vivek N. Shenoy, Alonzo D. Cook and Scott Bruder**, have invented a certain improvement in **LOCAL INTRAOSSEOUS ADMINISTRATION OF BONE FORMING AGENTS AND ANTI-RESORPTIVE AGENTS, AND DEVICES THEREFOR** described in an application for Patent,

- ☐ the specification of which is being executed on even date herewith and is about to be filed in the United States Patent Office (*use for utility (37 CFR § 1.53(b)) and design filings only*);
- ☐ is about to be filed in the United States Patent Office as a Provisional Application;
- ☒ the specification of which is United States Application No. **10/723,250**, filed **November 26, 2003**;
- ☐ the specification of which is a Patent Cooperation Treaty Application, International Application No. ☐, which designates the United States of America;
- ☐ which was patented under United States Patent No. ☐.

WHEREAS, **DePuy Spine, Inc.** (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the **State of Ohio**, and having a usual place of business at **325 Paramount Drive, Raynham, Massachusetts 02767-0350** desires to acquire an interest therein in accordance with agreements duly entered into with us;

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said application, together with the entire right, title and interest in and to said application and such Letters Patent as may issue on said invention; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made; we hereby convey all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. We hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of any future applications including substitution, reissue, divisional or continuation applications, and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

AND, we do hereby authorize and request each Patent Office and the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said invention to said ASSIGNEE, its successors, assigns, and legal representatives.

IN TESTIMONY WHEREOF, we have hereunto set our hands and affixed our seals the date set forth below.

Inventor's Signature: _____

Thomas M. DiMauro

Thomas M. DiMauro

State/Commonwealth

of Massachusetts

County of Bristol

On this 20th day of May, 2004, before me, the undersigned notary public, personally appeared **Thomas M. DiMauro**,

☒ personally known to me, or

☐ proved to me through satisfactory evidence of identification, which was

to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.

(SEAL)

Amy Schick

Notary Public

Amy Schick

(print name)

My Commission expires 1/21/2011

Docket No. 3518.1024-000

Inventor's Signature: _____

Mohamed Attawia
Mohamed Attawia

State/Commonwealth

of Massachusetts

County of Bristol

On this 24th day of May, 2004, before me, the undersigned notary public, personally appeared **Mohamed Attawia**,

☒ personally known to me, or

☐ proved to me through satisfactory evidence of identification, which was _____

to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.

(SEAL)

Amy Schick Notary Public
Amy Schick (print name)
My Commission expires 1/21/2011

Inventor's Signature: _____

Hassan Serhan
Hassan Serhan

State/Commonwealth

of Massachusetts

County of Bristol

On this 24 day of May, 2004, before me, the undersigned notary public, personally appeared **Hassan Serhan**,

☒ personally known to me, or

☐ proved to me through satisfactory evidence of identification, which was _____

to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.

(SEAL)

Amy Schick Notary Public
Amy SCHICK (print name)
My Commission expires 1/21/2011

Docket No. 3518.1024-000

Inventor's Signature: Melissa Grace

Melissa Grace

State/Commonwealth

of Massachusetts

County of Bristol

On this 20th day of May, 2004, before me, the undersigned notary public, personally appeared **Melissa Grace**,

☒ personally known to me, or

☐ proved to me through satisfactory evidence of identification, which was

to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.

(SEAL)

Amy Schick - Notary Public

Amy Schick (print name)

My Commission expires 1/21/2011

Inventor's Signature: Michael Slivka

Michael Slivka

State/Commonwealth

of Massachusetts

County of Bristol

On this 21st day of May, 2004, before me, the undersigned notary public, personally appeared **Michael Slivka**,

☒ personally known to me, or

☐ proved to me through satisfactory evidence of identification, which was

to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.

(SEAL)

Amy Schick Notary Public

Amy SCHICK (print name)

My Commission expires 1/21/2011

Docket No. 3518.1024-000

Inventor's Signature: _____

Thomas G. Ferro

State/Commonwealth _____

of _____

County of _____

On this _____ day of _____, 20____, before me, the undersigned notary public, personally appeared **Thomas G. Ferro**,

☐ personally known to me, or

☐ proved to me through satisfactory evidence of identification, which was _____

to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.

(SEAL)

Notary Public

(print name)

My Commission expires ____/____/____

Inventor's Signature: _____

Vivek N. Shenoy

State/Commonwealth _____

of _____

County of _____

On this _____ day of _____, 20____, before me, the undersigned notary public, personally appeared **Vivek N. Shenoy**,

☐ personally known to me, or

☐ proved to me through satisfactory evidence of identification, which was _____

to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.

(SEAL)

Notary Public

(print name)

My Commission expires ____/____/____

Docket No. 3518. 1024-000

Inventor's Signature: _____

Alonzo D. Cook
Alonzo D. Cook

State/Commonwealth

of Massachusetts

County of Bristol

On this 20th day of May, 20 04, before me, the undersigned notary public, personally appeared Alonzo D. Cook,

☒ personally known to me, or

☐ proved to me through satisfactory evidence of identification, which was _____

to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.

(SEAL)

Amy Schick Notary Public
Amy Schick (print name)
My Commission expires 1 / 21 / 2011

Inventor's Signature: _____

Scott Bruder
Scott Bruder

State/Commonwealth

of Massachusetts

County of Bristol

On this 24th day of May, 20 04, before me, the undersigned notary public, personally appeared Scott Bruder,

☒ personally known to me, or

☐ proved to me through satisfactory evidence of identification, which was _____

to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.

(SEAL)

Amy Schick Notary Public
Amy Schick (print name)
My Commission expires 1 / 21 / 2011

COPY

Docket No. 3518.1024-000

JointASSIGNMENT

WHEREAS, we, Thomas M. DiMauro, Mohamed Attawia, Hassan Serhan, Melissa Grace, Michael Slivka, Thomas G. Ferro, Vivek N. Shenoy, Alonzo D. Cook and Scott Bruder, have invented a certain improvement in **LOCAL INTRAOSSEOUS ADMINISTRATION OF BONE FORMING AGENTS AND ANTI-RESORPTIVE AGENTS, AND DEVICES THEREFOR** described in an application for Patent,

- ☐ the specification of which is being executed on even date herewith and is about to be filed in the United States Patent Office (*use for utility (37 CFR § 1.53(b)) and design filings only*);
- ☐ is about to be filed in the United States Patent Office as a Provisional Application;
- ☒ the specification of which is United States Application No. **10/723,250**, filed **November 26, 2003**;
- ☐ the specification of which is a Patent Cooperation Treaty Application, International Application No. [], which designates the United States of America;
- ☐ which was patented under United States Patent No. [].

WHEREAS, **DePuy Spine, Inc.** (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the State of Ohio, and having a usual place of business at **325 Paramount Drive, Raynham, Massachusetts 02767-0350** desires to acquire an interest therein in accordance with agreements duly entered into with us;

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said application, together with the entire right, title and interest in and to said application and such Letters Patent as may issue on said invention; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made; we hereby convey all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. We hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

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Docket No. 3518.1024-000

AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of any future applications including substitution, reissue, divisional or continuation applications, and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

AND, we do hereby authorize and request each Patent Office and the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said invention to said ASSIGNEE, its successors, assigns, and legal representatives.

IN TESTIMONY WHEREOF, we have hereunto set our hands and affixed our seals the date set forth below.

Inventor's Signature: _____

Thomas M. DiMauro

State/Commonwealth _____

of _____

County of _____

On this _____ day of _____, 20____, before me, the undersigned notary public, personally appeared **Thomas M. DiMauro**,

☐ personally known to me, or

☐ proved to me through satisfactory evidence of identification, which was _____

to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.

(SEAL)

Notary Public

(print name)

My Commission expires ____/____/____

-3-

Docket No. 3518.1024-000

Inventor's Signature: _____

Mohamed Attawia
Mohamed Attawia

State/Commonwealth

of _____

Massachusetts

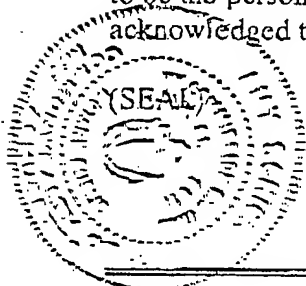
County of _____

Bristol

On this 7th day of June, 2004, before me, the undersigned notary public, personally appeared **Mohamed Attawia**,

☒ personally known to me, or☐ proved to me through satisfactory evidence of identification, which was _____

to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed. -

Amy Schick

Notary Public

Amy Schick

(print name)

My Commission expires 1/25/2011

Inventor's Signature: _____

Hassan Serhan

State/Commonwealth

of _____

County of _____

On this _____ day of _____, 20____, before me, the undersigned notary public, personally appeared **Hassan Serhan**,

☐ personally known to me, or☐ proved to me through satisfactory evidence of identification, which was _____

to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.

(SEAL)

Notary Public_____
(print name)

My Commission expires ____/____/____

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Docket No. 3518.1024-000

Inventor's Signature: _____

Melissa Grace

State/Commonwealth

of _____

County of _____

On this _____ day of _____, 20____, before me, the undersigned notary public, personally appeared **Melissa Grace**,

☐ personally known to me, or☐ proved to me through satisfactory evidence of identification, which was _____

to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.

(SEAL)

Notary Public_____
(print name)

My Commission expires ____/____/____

Inventor's Signature: _____

Michael Slivka

State/Commonwealth

of _____

County of _____

On this _____ day of _____, 20____, before me, the undersigned notary public, personally appeared **Michael Slivka**,

☐ personally known to me, or☐ proved to me through satisfactory evidence of identification, which was _____

to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.

(SEAL)

Notary Public_____
(print name)

My Commission expires ____/____/____

-5-

Docket No. 3518.1024-000

Inventor's Signature: _____

Thomas G. Ferro

State/Commonwealth _____

of _____

County of _____

On this _____ day of _____, 20____, before me, the undersigned notary public, personally appeared **Thomas G. Ferro**,

☐ personally known to me, or☐ proved to me through satisfactory evidence of identification, which was _____

to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.

(SEAL)

Notary Public_____
(print name)

My Commission expires ____/____/____

Inventor's Signature: _____

Vivek N. Shenoy

State/Commonwealth _____

of _____

County of _____

On this _____ day of _____, 20____, before me, the undersigned notary public, personally appeared **Vivek N. Shenoy**,

☐ personally known to me, or☐ proved to me through satisfactory evidence of identification, which was _____

to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.

(SEAL)

Notary Public_____
(print name)

My Commission expires ____/____/____

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Docket No. 3518.1024-000

Inventor's Signature: _____

Alonzo D. Cook

State/Commonwealth _____

of _____

County of _____

On this _____ day of _____, 20____, before me, the undersigned notary public, personally appeared **Alonzo D. Cook**,

☐ personally known to me, or☐ proved to me through satisfactory evidence of identification, which was _____

to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.

(SEAL)

Notary Public_____
(print name)

My Commission expires ____/____/____

Inventor's Signature: _____

Scott Bruder

State/Commonwealth _____

of _____

County of _____

On this _____ day of _____, 20____, before me, the undersigned notary public, personally appeared **Scott Bruder**,

☐ personally known to me, or☐ proved to me through satisfactory evidence of identification, which was _____

to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.

(SEAL)

Notary Public_____
(print name)

My Commission expires ____/____/____

COPY

Docket No. 3518.1024-000

Joint

ASSIGNMENT

WHEREAS, we, **Thomas M. DiMauro, Mohamed Attawia, Hassan Serhan, Melissa Grace, Michael Slivka, Thomas G. Ferro, Vivek N. Shenoy, Alonzo D. Cook and Scott Bruder**, have invented a certain improvement in **LOCAL INTRAOSSEOUS ADMINISTRATION OF BONE FORMING AGENTS AND ANTI-RESORPTIVE AGENTS, AND DEVICES THEREFOR** described in an application for Patent,

- ☐ the specification of which is being executed on even date herewith and is about to be filed in the United States Patent Office (*use for utility (37 CFR § 1.53(b)) and design filings only*);
- ☐ is about to be filed in the United States Patent Office as a Provisional Application;
- ☒ the specification of which is United States Application No. **10/723,250**, filed **November 26, 2003**;
- ☐ the specification of which is a Patent Cooperation Treaty Application, International Application No. [], which designates the United States of America;
- ☐ which was patented under United States Patent No. [].

WHEREAS, **DePuy Spine, Inc.** (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the **State of Ohio**, and having a usual place of business at **325 Paramount Drive, Raynham, Massachusetts 02767-0350** desires to acquire an interest therein in accordance with agreements duly entered into with us;

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said application, together with the entire right, title and interest in and to said application and such Letters Patent as may issue on said invention; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made; we hereby convey all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. We hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of any future applications including substitution, reissue, divisional or continuation applications, and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

AND, we do hereby authorize and request each Patent Office and the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said invention to said ASSIGNEE, its successors, assigns, and legal representatives.

IN TESTIMONY WHEREOF, we have hereunto set our hands and affixed our seals the date set forth below.

Inventor's Signature: _____

Thomas M. DiMauro

State/Commonwealth _____

of _____

County of _____

On this _____ day of _____, 20____, before me, the undersigned notary public, personally appeared **Thomas M. DiMauro**,

☐ personally known to me, or

☐ proved to me through satisfactory evidence of identification, which was _____

to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.

(SEAL)

Notary Public

(print name)

My Commission expires ____/____/____

Docket No. 3518.1024-000

Inventor's Signature: _____

Mohamed Attawia

State/Commonwealth

of _____

County of _____

On this _____ day of _____, 20____, before me, the undersigned notary public, personally appeared **Mohamed Attawia**,

☐ personally known to me, or

☐ proved to me through satisfactory evidence of identification, which was _____

to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.

(SEAL)

Notary Public

(print name)

My Commission expires ____/____/____

Inventor's Signature: _____

Hassan Serhan

State/Commonwealth

of _____

County of _____

On this _____ day of _____, 20____, before me, the undersigned notary public, personally appeared **Hassan Serhan**,

☐ personally known to me, or

☐ proved to me through satisfactory evidence of identification, which was _____

to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.

(SEAL)

Notary Public

(print name)

My Commission expires ____/____/____

Docket No. 3518.1024-000

Inventor's Signature: _____

Melissa Grace

State/Commonwealth

of _____

County of _____

On this _____ day of _____, 20____, before me, the undersigned notary public, personally appeared **Melissa Grace**,

☐ personally known to me, or

☐ proved to me through satisfactory evidence of identification, which was

_____ to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.

(SEAL)

Notary Public

(print name)

My Commission expires ____/____/____

Inventor's Signature: _____

Michael Slivka

State/Commonwealth

of _____

County of _____

On this _____ day of _____, 20____, before me, the undersigned notary public, personally appeared **Michael Slivka**,

☐ personally known to me, or

☐ proved to me through satisfactory evidence of identification, which was

_____ to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.

(SEAL)

Notary Public

(print name)

My Commission expires ____/____/____

Docket No. 3518.1024-000

Inventor's Signature: _____

Thomas G. Ferro

Thomas G. Ferro

State/Commonwealth

of Indiana

County of Kosciusko

On this 25th day of May, 2004, before me, the undersigned notary public, personally appeared **Thomas G. Ferro**,

☒ personally known to me, or

☐ proved to me through satisfactory evidence of identification, which was _____

to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.

(SEAL)

Karen Broce

Notary Public

Karen Broce

(print name)

My Commission expires 2/28/2008

Inventor's Signature: _____

Vivek N. Shenoy

State/Commonwealth

of _____

County of _____

On this _____ day of _____, 20____, before me, the undersigned notary public, personally appeared **Vivek N. Shenoy**,

☐ personally known to me, or

☐ proved to me through satisfactory evidence of identification, which was _____

to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.

(SEAL)

Notary Public

(print name)

My Commission expires ____/____/____

Inventor's Signature: _____

Alonzo D. Cook

State/Commonwealth

of _____

County of _____

On this _____ day of _____, 20____, before me, the undersigned notary public, personally appeared **Alonzo D. Cook**,

☐ personally known to me, or

☐ proved to me through satisfactory evidence of identification, which was _____

to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.

(SEAL)

Notary Public

(print name)

My Commission expires ____/____/____

Inventor's Signature: _____

Scott Bruder

State/Commonwealth

of _____

County of _____

On this _____ day of _____, 20____, before me, the undersigned notary public, personally appeared **Scott Bruder**,

☐ personally known to me, or

☐ proved to me through satisfactory evidence of identification, which was _____

to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.

(SEAL)

Notary Public

(print name)

My Commission expires ____/____/____

COPY

Docket No. 3518.1024-000

Joint

ASSIGNMENT

WHEREAS, we, **Thomas M. DiMauro, Mohamed Attawia, Hassan Serhan, Melissa Grace, Michael Slivka, Thomas G. Ferro, Vivek N. Shenoy, Alonzo D. Cook and Scott Bruder**, have invented a certain improvement in **LOCAL INTRAOSSEOUS ADMINISTRATION OF BONE FORMING AGENTS AND ANTI-RESORPTIVE AGENTS, AND DEVICES THEREFOR** described in an application for Patent,

- ☐ the specification of which is being executed on even date herewith and is about to be filed in the United States Patent Office (*use for utility (37 CFR § 1.53(b)) and design filings only*);
- ☐ is about to be filed in the United States Patent Office as a Provisional Application;
- ☒ the specification of which is United States Application No. **10/723,250**, filed **November 26, 2003**;
- ☐ the specification of which is a Patent Cooperation Treaty Application, International Application No. [], which designates the United States of America;
- ☐ which was patented under United States Patent No. [].

WHEREAS, **DePuy Spine, Inc.** (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the **State of Ohio**, and having a usual place of business at **325 Paramount Drive, Raynham, Massachusetts 02767-0350** desires to acquire an interest therein in accordance with agreements duly entered into with us;

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said application, together with the entire right, title and interest in and to said application and such Letters Patent as may issue on said invention; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made; we hereby convey all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. We hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

Docket No. 3518.1024-000

AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of any future applications including substitution, reissue, divisional or continuation applications, and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

AND, we do hereby authorize and request each Patent Office and the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said invention to said ASSIGNEE, its successors, assigns, and legal representatives.

IN TESTIMONY WHEREOF, we have hereunto set our hands and affixed our seals the date set forth below.

Inventor's Signature: _____

Thomas M. DiMauro

State/Commonwealth _____

of _____

County of _____

On this _____ day of _____, 20____, before me, the undersigned notary public, personally appeared **Thomas M. DiMauro**,

☐ personally known to me, or

☐ proved to me through satisfactory evidence of identification, which was _____

to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.

(SEAL)

Notary Public

(print name)

My Commission expires ____/____/____

Docket No. 3518.1024-000

Inventor's Signature: _____

Mohamed Attawia

State/Commonwealth

of _____

County of _____

On this _____ day of _____, 20____, before me, the undersigned notary public, personally appeared **Mohamed Attawia**,

☐ personally known to me, or

☐ proved to me through satisfactory evidence of identification, which was _____

to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.

(SEAL)

Notary Public

(print name)

My Commission expires ____/____/____

Inventor's Signature: _____

Hassan Serhan

State/Commonwealth

of _____

County of _____

On this _____ day of _____, 20____, before me, the undersigned notary public, personally appeared **Hassan Serhan**,

☐ personally known to me, or

☐ proved to me through satisfactory evidence of identification, which was _____

to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.

(SEAL)

Notary Public

(print name)

My Commission expires ____/____/____

Docket No. 3518.1024-000

Inventor's Signature: _____

Melissa Grace

State/Commonwealth

of _____

County of _____

On this _____ day of _____, 20____, before me, the undersigned notary public, personally appeared **Melissa Grace**,

☐ personally known to me, or

☐ proved to me through satisfactory evidence of identification, which was _____

to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.

(SEAL)

Notary Public

(print name)

My Commission expires ____/____/____

Inventor's Signature: _____

Michael Slivka

State/Commonwealth

of _____

County of _____

On this _____ day of _____, 20____, before me, the undersigned notary public, personally appeared **Michael Slivka**,

☐ personally known to me, or

☐ proved to me through satisfactory evidence of identification, which was _____

to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.

(SEAL)

Notary Public

(print name)

My Commission expires ____/____/____

Docket No. 3518.1024-000

Inventor's Signature: _____

Thomas G. Ferro

State/Commonwealth

of _____

County of _____

On this _____ day of _____, 20____, before me, the undersigned notary public, personally appeared **Thomas G. Ferro**,

☐ personally known to me, or

☐ proved to me through satisfactory evidence of identification, which was _____

to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.

(SEAL)

Notary Public

(print name)

My Commission expires ____/____/____

Inventor's Signature: _____

Vivek N. Shenoy

State/Commonwealth

of California

County of Santa Clara

On this 25th day of May, 2004, before me, the undersigned notary public, personally appeared **Vivek N. Shenoy**,

☐ personally known to me, or

☒ proved to me through satisfactory evidence of identification, which was

CA DRIVER LICENSE B4282070

to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.



IZABEL SWIERCZ

COMM. #1460355

NOTARY PUBLIC - CALIFORNIA

SANTA CLARA COUNTY

My Comm. Expires Jan. 5, 2008

Notary Public

(print name)

My Commission expires Jan 5 / 2008

Docket No. 3518.1024-000

Inventor's Signature: _____

Alonzo D. Cook

State/Commonwealth

of _____

County of _____

On this _____ day of _____, 20____, before me, the undersigned notary public, personally appeared **Alonzo D. Cook**,

☐ personally known to me, or

☐ proved to me through satisfactory evidence of identification, which was _____

to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.

(SEAL)

Notary Public

(print name)

My Commission expires ____/____/____

Inventor's Signature: _____

Scott Bruder

State/Commonwealth

of _____

County of _____

On this _____ day of _____, 20____, before me, the undersigned notary public, personally appeared **Scott Bruder**,

☐ personally known to me, or

☐ proved to me through satisfactory evidence of identification, which was _____

to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.

(SEAL)

Notary Public

(print name)

My Commission expires ____/____/____